

Hilbert, David

[Bernays, Paul; Toepell, Michael; Kiechle, Hubert; Kreuzer, Alexander; Wefelscheid, Heinrich]

Foundations of geometry. With supplementary material by Paul Bernays. With contributions by Michael Toepell, Hubert Kiechle, Alexander Kreuzer and Heinrich Wefelscheid. Ed. and with appendixes by Michael Toepell. 14. Aufl. (Grundlagen der Geometrie. Mit Supplementen von Paul Bernays. Mit Beiträgen von Michael Toepell, Hubert Kiechle, Alexander Kreuzer and Heinrich Wefelscheid. Herausgegeben und mit Anhängen von Michael Toepell.) (German) [Zbl 0933.01031](#)

Teubner-Archiv zur Mathematik. Supplement. 6. Stuttgart: B. G. Teubner. xxiii, 408 S. (1999).

On the occasion of the centenary of the appearance in 1899 of David Hilbert's celebrated and influential "Foundations of geometry" (cf. [JFM 30.0424.01](#)) the original publisher B. G. Teubner has issued the fourteenth edition of the book in its historical series "Teubner Archiv zur Mathematik". The edition has been carefully prepared by the leading authority on Hilbert's work in geometry, M. Toepell. He has based much of the extensive new commentary and appendixes on his German book "Über die Entstehung von David Hilbert's 'Grundlagen der Geometrie'", Göttingen, Vandenhoeck & Ruprecht (1986; [Zbl 0602.01013](#)). Drawing as in his book upon Hilbert's unpublished papers in Göttingen, Toepell succeeds – among other things – in showing that projective geometry, although omitted from Hilbert's Grundlagen, was instrumental in shaping Hilbert's ideas on the axiomatics of geometry. The publication as an appendix of Hilbert's school note-book on geometry testifies to this and provides, at the same time, an impressive picture of the high level of geometrical instruction at German (here: Königsberg) gymnasia as of 1879/80. In omitting projective geometry and suppressing – to a certain extent, but not as much as some contemporaries as Italian G. Peano would do – intuition, Hilbert's Grundlagen paved the way for various tendencies towards algebraic and topological thinking in geometry in the following century (Moufang, Thomsen, Hjelmslev etc.), as is concisely described in another appendix written by German working mathematicians H. Kiechle, A. Kreuzer, and H. Wefelscheid.

Reviewer: [Reinhard Siegmund-Schultze \(Berlin\)](#)

MSC:

- [01A75](#) Collected or selected works; reprintings or translations of classics
- [51-03](#) History of geometry
- [53-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to differential geometry
- [51A05](#) General theory of linear incidence geometry and projective geometries
- [51M15](#) Geometric constructions in real or complex geometry

Cited in **2** Reviews
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Keywords:

[axiomatics](#); [foundations of geometry](#); [projective geometry](#)